Safety Advice

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Capacitor failure at Waverley signalling centre

Issued to:	**Network Rail line managers, safety professionals and accredited contractors**
Ref:	NRA21-12
Date of issue:	19/08/2021
Location:	Waverley signalling centre
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Overview

Edinburgh Waverley Signalling Centre recently suffered an incident where a capacitor in an Uninterruptible Power Supply (UPS) failed. The capacitor emitted smoke into the plant room, which spread to the Operations floor. The fire alarm was activated.

The incident led to the building being evacuated, with attendance by the fire brigade. There was severe disruption on the network, resulting in significant train delays.

Investigation has identified this UPS unit had been mistakenly removed from the annual maintenance inspection by the manufacturer (Vertiv) in 2017 and was not in Ellipse (it had previously been recorded in Ellipse). The capacitor had not been renewed since it was installed around 2001. The unit was a Vertiv Chloride EDP90, 80KVA unit.

Things to consider:

- Resilience of the network if a catastrophic failure occurs with critical equipment UPS equipment.
- Are adequate maintenance arrangements in place for critical assets?
- What age should capacitors be renewed? How do we inspect and maintain capacitors?
- Should electrical equipment be located away from operational buildings or are fire separation measures within the building adequate?
- Should fire suppression systems be installed within electrical equipment rooms?

Immediate action required

The following immediate actions must be taken across all Regions:

- Check all UPS units are in Ellipse with maintenance requirements correctly set up.
- Review UPS and capacitor age profiles and the criticality of each location to devise an action plan.

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